

Depot to “Lean” on efficiency philosophy to improve operations

By Mike Hammond

Reducing cycle time, perhaps better known as turnaround time or TAT, leads to greater fleet readiness by making aircraft and parts more available to the warfighter. The mission of NAVAIR Depot North Island is to “provide top quality products and services at the best value *in the fastest time*.”

Put the two facts together and you have the driving force behind NAVAIR’s *AIR-SPEED* initiative (see July 03 *Depotalk*) and North Island depot’s decision to adopt the methodology of Lean manufacturing, now being utilized in the private sector manufacturing industry by such firms as General Motors, Goodrich and Boeing to identify and eliminate design, production, supply and customer interactions that burden rather than add value to manufacturing and re-manufacturing processes.

All three NAVAIR depots, North Island in San Diego, Calif., Cherry Point, N.C., and Jacksonville, Fla., are moving to implement best business practice cycle time reduction tools under the

NAVAIR Depot “*AIRSPEED*” initiative. Lean manufacturing is one of these tools. Lean draws on Japanese manufacturing techniques while it focuses on eliminating waste or non-value added effort in depot processes.

Waste, under Lean manufacturing, doesn’t mean excess or that which gets thrown away. It means inventory that’s not being used immediately in processes

ing utilized at maximum efficiency, and it means bottlenecks in the flow of products.

The Components Program recently began implementation of Lean in the Dynamic Components Landing Gear Shop. A cross functional team of 25 representatives from Production, Quality Assurance, Engineering, Facilities, Information Technology, the NAVAIR Depot Maintenance System team and the Fleet and Industrial Supply Center were part of the first “event” that provided attendees with a week of intense learning and assessment of the Landing Gear Shop.

Welcoming the team, NAVAIR North Island’s Commanding Officer Capt. Jim Woolway put the reason for implementing the philosophy at the depot into perspective: “Lean fits in perfectly. It fits in with our vision to be the leader in innovative aviation maintenance solutions, committed to customer, workforce and community, as warfighter support is our only reason for being. Lean provides the framework, system and linkage to our customer, the fleet.”

—He also said that “squadrons will have smaller windows to get ready to deploy,” necessitating faster flow of work through the plant.

Executive Officer Capt. Tim Trainer told the team, “If we don’t change, we’ll be left behind. Lean will make us and keep us competitive.

After citing the need for “a culture change” Trainer noted that Lean



Commanding Officer Jim Woolway kicks off AIRSPEED at NAVAIR Depot North Island and introduces managers and specialists to Lean manufacturing methodology at the opening session of week-long training in using Lean to move aircraft parts through the plant faster and more efficiently. Photo by Joe Feliciano

or not being shipped to customers. It means time wasted between turning out the last good piece from a manufacturing run and completing the first good piece from the next run. It means mistakes, it means equipment that’s not be-

Continued from page 1

“can produce ‘velocity’ through the plant, which means that we can improve the availability of aircraft in the fleet. Workload remains the same or possibly

that the fleet can’t fly an aircraft or must perform additional work to do so. The elimination of the seven wastes – inventory, transportation, waiting, over processing, correction, motion or over production – will drive our TAT down, ultimately providing more quality components to the fleet,” said Sandoval.

He then answered the question “Why Lean? Lean will eliminate the seven types of waste because of the flow and linkage associated with moving parts through the plant. Lean will help us achieve even higher quality levels and it’s been proven in re-manufacturing plants.

Lean will also give us visual cues on how our product is flowing and identify specific problems in real time that will lead to resolutions.”

Sandoval also addressed “Why

tify wastes, plan countermeasures, make changes, verify changes, quantify changes, make standard, celebrate, and do it again!”

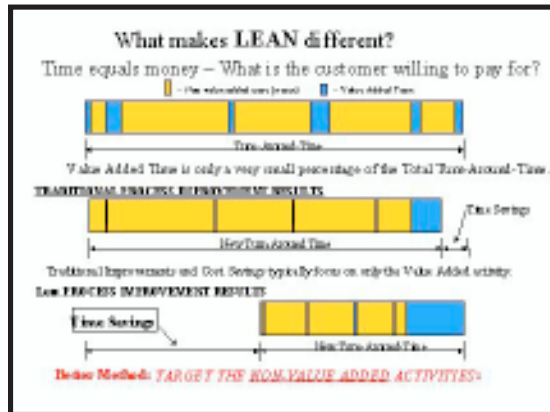
Tom Jarvis, on detail to Components from his Research and Engineering Dept. Code 4.3.5 position as the F/A-18 Subsystems Sub-team Leader, is the Lean promotion officer for this effort. After the first week of introduction to Lean, and with two other training sessions scheduled ahead, Jarvis said, “Lean gives us the best possible opportunity to make North Island our customers’ (maintenance) facility of choice.... I have a lot of faith in the plant and its ability to be that – there are opportunities to improve that need to be exploited.”

Jarvis noted that he learned more than just Lean from the initial week. “I gained a lot of respect for the production areas. I can see now the difficult challenges the artisans have to overcome in order to get their work done.... Our support systems, like information technology, production control, engineering, will see under Lean much more interface with the production areas. That creates better communication and will help optimize the entire production process.”

Jack Braun, an engineering technician assigned to the F/A-18 FST, has extensive experience with the Landing Gear Shop where Lean will first be implemented at the Depot. “My role will be to utilize my experience to help identify challenges the shop faces and help overcome them with the improvements Lean can generate in shop processes.”

In charge of the Landing Gear Shop, supervisor Arnold Martinez finds his shop and artisans the initial beneficiary of the improvements expected to come from Lean. His role is similar to that of the baseball coach with a world of talent on his team that needs guidance to bring it all together for success.

“I know the roles and capabilities



Lean focuses on reducing non-value added steps in processing to produce time and cost savings.

increases as we put more components and aircraft through the plant faster to get them back in the hands of the warfighter.”

Harold Hassebrock, of Moffitt Associates, the firm that will provide the knowledge base for NAVAIR North Island to move into Lean manufacturing, said that North Island and the other depots “need to do what’s best for the customer – be so good that the competition becomes irrelevant. You want to be the supplier of choice.”

Dusty Sandoval, NAVAIR North Island’s Industrial Components Repair and Modification Division manager, in whose area Lean is being introduced, asked the team, “Why change? Although we produce thousands of components yearly, the fleet has many components that are ‘Headhurlers or Degraders’ — and we can’t provide enough of them fast enough to satisfy their needs. Our Degraded charts illustrate that we can’t be making our customers happy and we have increasing backorders and TAT on some of the critical components that we produce.

“Although we produced over 60,000 components in fiscal year 2002, just one of these ‘headhurlers’ means

Kaizen?” noting the Japanese approach that Moffitt Associates takes towards implementation. “Kaizen is akin to ‘Dr. Deming on steroids’”, he said, “as it builds upon our previous continuous improvement efforts with a ‘bias for action’. Kaizen employs the ‘ready, fire, aim’ approach vice ‘ready, aim, fire’. With Kaizen, it’s document reality, iden-



Parts await movement to aircraft programs or shipment to Navy supply system. This process will be improved and speeded up significantly at NAVAIR North Island as the Lean methodology is implemented. Photo by Joe Feliciano

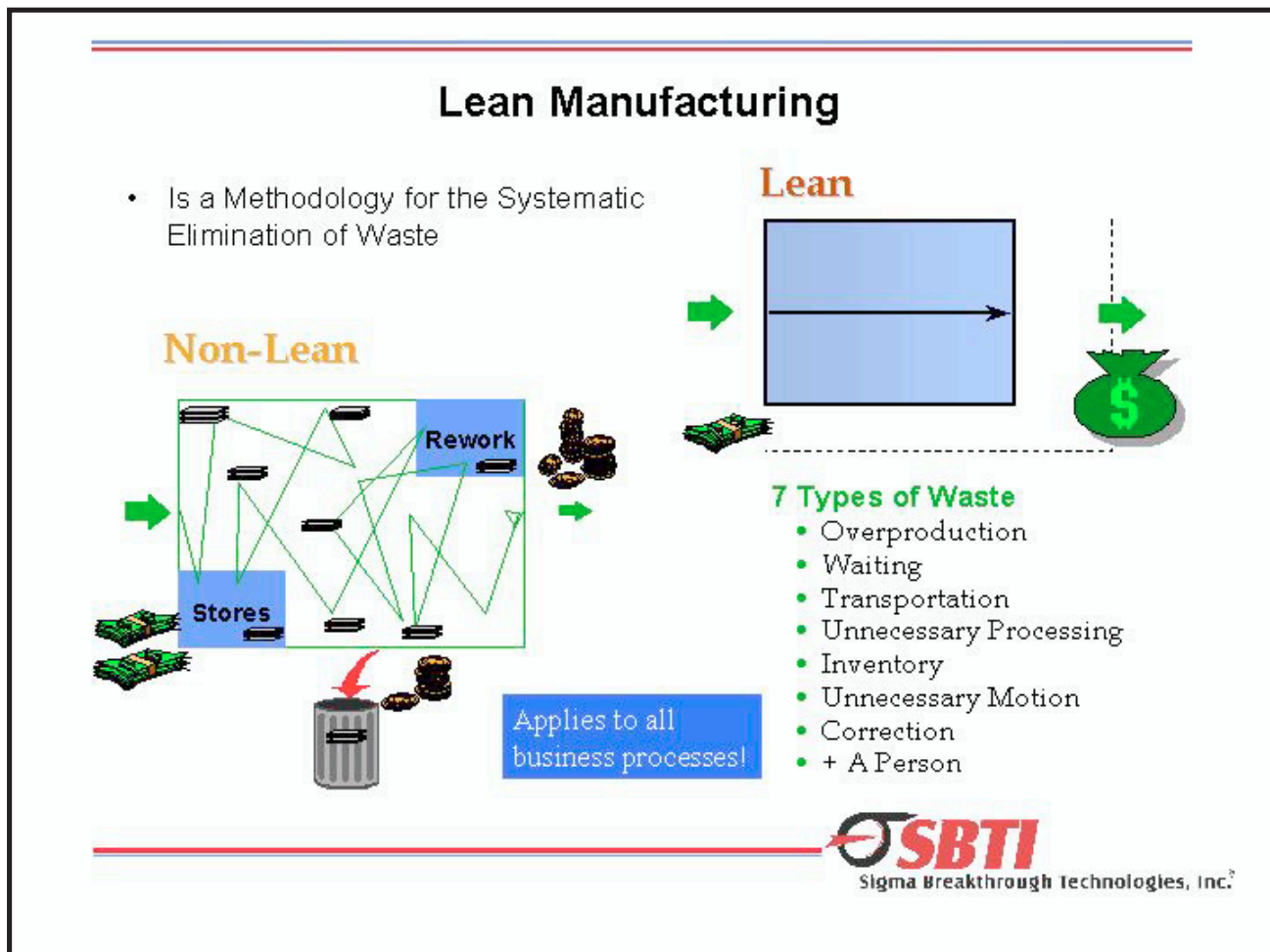
Continued from page 2

of the artisans, the flow of the work, challenges that exist, resources that are available and the dynamics of the process. I'm sort of the reality check on Lean, giving the improvement it gives us the best chance to succeed. Lean will give us 'tools' to improve at the shop level...it's up to me to see that Lean works on the shop floor. I'll be there to implement changes, coordinate artisan certification, arrange training, etc."

As the man in the leadoff batter's spot, Martinez is enthusiastic about the potential of Lean. "Lean is a smart way to do business in the future. Manufacturing is so competitive, we have to stay on top of it and Lean provides streamlining to produce quality products in a more efficient manner. As Lean is implemented, Landing Gear Shop capabilities will improve and increase."

Sandoval, too, is enthusiastic about Lean and its potential. He notes that the perfect example of Lean is the deck of an aircraft carrier - the visual cues, and the flow, with minimal waste during both launch and recovery.

To meet our responsibilities to the warfighter, Lean is the way to go.



Lean aims to improve process flow by eliminating waste from all production supporting processes.